V850 family

Product Letter

V850ES/GB1 Venus

32-bit RISC Microcontroller

Description

The V850ES/GB1 'Venus' is a member of NEC's V850 32-bit RISC microcontroller family. The implemented V850ES core is optimized for low power consumption. The 'Venus' combines the high performance of a 32-bit RISC-processor with a universal set of peripherals for a wide range of different applications not only in the automotive field.

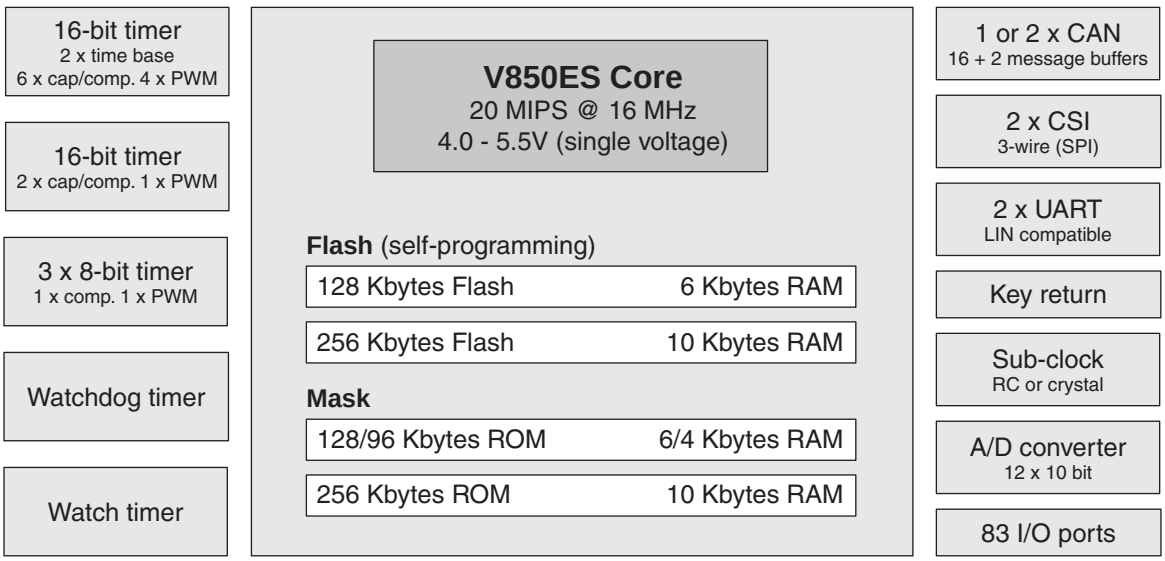
Application

The V850 'Venus' is suited for automotive-body applications including sub clock functionality for low power operation and a powerful set of 8-bit and 16-bit timers. It also offers two LIN compatible UART-interfaces to support LIN-bus or to built up a CAN to LIN gateway.

Features

- V850ES CPU core
- 16 MHz @ 4,0 - 5,5V
- Sub clock operation with RC or crystal
- Power saving modes: WATCH, HALT, STOP
- 12-channel 10-bit A/D converter, including power fail detector
- 2 x CSI
- 2 x UART
- 1 CAN Interface (2.0b) max. 1Mbit/s transfer rate
- Timer unit:
  1 x 16-bit multi purpose timer unit
  1 x 16-bit capture/compare timer
  3 x 8-bit PWM timer
- Separate watch timer and watchdog timer
- Key return function
- Interrupt controller (up to 31 internal, 10 external + NMI)
- 71 I/O + 12 input ports
- 100-pin QFP package (14 x 14 mm)

Block Diagram



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Ordering Information

Devices

Part Number	ROM (Kbytes)	Flash (Kbytes)	RAM (Kbytes)	CAN channel	Subclock
µPD703223GC-8EU	96	-	4	1	Crystal
µPD703224GC-8EU	128	-	6	1	Crystal
µPD70F3224GC-8EU	-	128	6	1	Crystal
µPD70322XGC-8EU*	256	-	10	2	Crystal
µPD70F322XGC-8EU*	-	256	10	2	Crystal
µPD703225GC-8EU	96	-	4	1	RC-network
µPD703226GC-8EU	128	-	6	1	RC-network
µPD7F3226GC-8EU	-	128	6	1	RC-network
µPD70322XGC-8EU*	256	-	10	2	RC-network
µPD70F322XGC-8EU*	-	256	10	2	RC-network

*to be planned

Package: 100-pin QFP

Documentation

Doc Number	Devices	Type
U13919EE4V0DBC0	NEC Microcontrollers	Data Book (CD ROM)
U10243EJ6V0UM00	V850	Architecture Manual
tbd	V850/GB1 Venus	Data Sheet
U15872EE1V0UM00	V850/GB1 Venus	User's Manual
U16213EE1V0PL00	V850/GB1 Venus	Product Letter

For further information on NEC's V850ES/GB1 controllers or other NEC products visit our European website at **www.ee.nec.de/V850**.

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